



MiniVM

MiniVM is a Small but Optimizing Virtual Machine and Runtime.

It has a just-in-time compiler based on Cuik's TB.

Currently it supports Linux x86-64, FreeBSD amd64 with work going on to re-add Windows x64 support.

MiniVM is written in C11 with (minor GNU extensions), and builds with GCC and Clang, with TCC support not hard to patch in.

Building

MiniVM uses GNU Make as it's build system.

Requirements

You'll need *

- * The MiniVM repo
- * Make sure to get the cuik submodule
- * You can use `git clone github.com/FastVM/minivm --recursive`
- * If you've already cloned you can use `git submodule update --init`
- * A C Compiler
- * GCC works
- * Clang works if you replace `CC=gcc` with `CC=clang`

Build Configs

Here's some Shell Commands to build MiniVM different ways

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- Debug - `make -Bj OPT='-g'`
 - For Size - `make -Bj CC=gcc OPT='-s -Oz -flto -fno-asynchronous-unwind-tables -fomit-frame-pointer'`
 - GCC does a better job than Clang to make tiny binaries of MiniVM.
 - For Speed - `make -Bj OPT='-O3 -flto'`

Binary Size

- 142.9 KiB when built for size
- 284.1 KiB when built for speed
- 901.0 Kib when built for debug

Speed

Here's some benchmark runs, they aren't too representative yet.

Math + Recursion

```
1 shell> ./build/bin/minivm --dump-time test/fib/fib40.lua
2 102334155
3 took: 1725.805ms
```

Startup Perf

```
1 shell> ./build/bin/minivm --dump-time -e 'print("hello world")'
2 Hello, World
3 took: 0.307ms
```